USSR

TROITSKIY, V. A., and KALINNIKOV, S. A., Avtomaticheskaya Svarka, No 7, Jul 70, pp 49-53

Transformers hold great promise for reliability, cost, and quality of secondary voltage characteristics; expenditures for active materials are only 20-30% higher than those for nonadjustable transformers.

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USSR

UDC: 539.163.546.657

BUTTSEV, V. S., VYLOV, Ts., GROMOV, K. Ya., KALINNIKOV, V. G., Joint Institute of Nuclear Research

"Investigation of the Decay of Neodymium and Praseodymium Nuclides With Mass Number A = 136"

Moscow, Izvestiya Akademii Nauk SSSR: Seriya Fizicheskaya, Vol 37, No 8, Aug 73, pp 1581-1589

Abstract: The paper investigates the chain decay $^{136}Nd \rightarrow ^{136}Pr \rightarrow ^{136}Ce$. About 100 new γ-transitions are observed in the decay of ^{136}Nd and ^{136}Pr. Types of multipole orders are determined for a number of these transitions. A decay scheme is proposed for the first time for ^{136}Nd (55.0 + 1.5 min), and a considerable augmentation is made to the decay scheme of ^{136}Pr (12.9+0.4 min). The authors thank V. P. Afanas'yev, I. I. Gromova, N. A. Lebedev, E. Kherrmann, Kh Tyrroff, A. A. Aleksandrov, V. M. Mosyazh, Ya. Polakhova, V. Bonova, and M. Nenova for considerable interest in the work.

1/1

USSR

UDC: None

ALEKSANDROV, V. S., BUTTSEV, V. S., VYLOV, Ts., GROMOV, K. Ya., and KALINNIKOV, V. G.

"Determining the Energy of the $^{134}Ce \xrightarrow{\varepsilon} {}^{134}La$ and $^{160}Er \xrightarrow{\varepsilon} {}^{160}Ho$ Decays"

Moscow, Izvestiya Akademii Nauk SSSR--Seriya Fizicheskaya, No 5, 1973, pp 948-952

Abstract: Using experimental and theoretical data from earlier papers, the authors of the present article determine the energy arising from the decay of $^{134}Ce \xrightarrow{\varepsilon} {}^{134}La$ and $^{160}Er \xrightarrow{\varepsilon} {}^{160}Ho$. The method of the determination is illustrated by the example of the latter decay, where the formula for the number of x-ray quanta of the K series for Ho per 100 decays of ^{160}Er during a specified time interval and the formula for the number of x-ray quanta of the K series for Dy per 100 δ decays of $^{160*}Ho$ over the same time interval, are used. The experiments through which the data were obtained are briefly described. and diagrams illustrating the systems of the decays are given. Plots of the x-ray radiation spectra for both

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ALEKSANDROV, V. S., et al., Izvestiya Akademii Nauk SSSR--Seriya Fizicheskaya, No 5, 1973, pp 948-952

types of decay are also given. The authors thank N. A. Lebedev, V. P. Afanas'yev and I. I. Gromov for preparing the specimens used in the experiments, and Ye. P. Grigor'yev for his interest in the work. It is noted that the method here given is practically unique for this type of decay chain.

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USSR

UDC: 539.163.546.656

BUTTSEV, V. S., GROMOV, K. Ya., and KALINNIKOV, V. G.

"Quasi-Proton Excitation States in the Magic ^{141}Pr Nucleus"

Moscow, Izvestiya Akademii Nauk SSSR--Seriya Fizicheskaya, No 5, 1973, pp 1024-1034

Abstract: There has been a great deal of interest in the characteristics of magic nuclei in which N = 82 and Z > 50 as a result of attempts to describe the characteristics of lower states in this nuclear area in the quasi-particle approximation for protons beyond the filled core. This paper gives the results of exhaustive research into the excitation quasi-neutron states in the ^{141}Pr nucleus, and the gamma radiation spectra, conversion electrons, and gamma-gamma coincidences of ^{141}Nd. This last isotope was obtained through the fission of Gd by fast protons in a two-hour irradiation on the OIYaI (Joint Institute of Nuclear Research) synchrocyclotron. A table of information on the gamma transitions of ^{141}Pr is given together with diagrams illustrating the decay of ^{141}Nd and the excitation spectra of ^{141}Pr. The authors thank V. P. Afanas'yev, I. I. Gromova, N. A. Lebedev, Ts. Vylov, the measurement center team of the Laboratory of Nuclear Problems in the OIYaI, the

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USSR

BUTISEV, V. S., et al., Izvestiya Akademii Nauk SSSR--Seriya Fizicheskaya, No 5, 1973, pp 1024-1034

operators of the SDS-1604A computer, graduate student N. A. Tikhonov of the Leningrad State University, LSU students A. Aleksandrov and V. Mosyazh, as well as Ya. Polakhova, V. Bonova, and M. Nenova for their assistance with the experiments.

2/2

1/2 014 UNCLASSIFIED PROCESSING DATE--18SEP70

TITLE--ANOMALIES OF MAGNETIC PROPERTIES OF VANADYL (VO PRIME2POSITIVE) MONO AND DICARBOXYLATES -U-

AUTHOR-(04)-KALINNIKOV, V.T., ZELENTSOV, V.V., KUZMICHEVA, O.N., AMINOV, T.G.

COUNTRY OF INFO--USSR

SOURCE--ZH. NEORG. KHIM. 1970, 15(3) 661-5

DATE PUBLISHED--------70

SUBJECT AREAS--PHYSICS

TOPIC TAGS--MAGNETIC SUSCEPTIBILITY, TEMPERATURE DEPENDENCE, CARBOXYLIC ACID, VANADIUM COMPLEX, PARAMAGNETIC ION, EXCHANGE REACTION

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1987/0776 STEP NO--UR/0078/70/015/003/0661/0665

CIRC ACCESSION NO--AP0104222

UNCLASSIFIED

2/2 014 UNCLASSIFIED PROCESSING DATE--18SEP70

CIRC ACCESSION NO--AP0104222

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. AMONG 26 STUDIED VO PRIME2POSITIVE MONO AND DICARBOXYLIC ACID COMPLEXES, ONLY THE MAGNETIC SUSCEPTIBILITY (CHI M) OF VO PRIME2POSITIVE FORMATE HYDRATES AND VO PRIME2POSITIVE MALONATE HAD CURIE WEISS TEMP. DEPENDENCES WITH POS. WEISS CONSTS. THE REMAINING VO PRIME2POSITIVE COMPLEXES OF ALKYL OR ARYLCARBOXYLATES HAD TEMP. INDEPENDENT CHI M. AT ROOM TEMP., THEY HAD LOW MU SUBEFF, WHICH DECREASED GRADUALLY WITH TEMP. THIS PHENOMENON IS EXPLAINED BY AN ISOTOPE INTERACTION IN THE LINEAR CHAIN OF PARAMAGNETIC V (IV) IONS WITH A LARGE (N IS LARGER THAN OR EQUAL TO 10) EVEN NO. OF NUCLEI. THE EXCHANGE INTEGRALS OF THESE COMPDS. ARE 170-290 CM PRIME NEGATIVE1.

UNCLASSIFIED

USSR

UDC 620.193.37

VASILENKO, I. I., MELEKHOV, R. K., SHULTE, A. Yu. KALINNIKOV, Ye. S.,

Physicomechanical Institute, Academy of Sciences, Ukrainian SSR. L'vov;
Central Scientific Research Institute of Ferrous Metallurgy imeni I. P. Bardin, Moscow

"Increasing the Strength of Steel 17G1S Against Corrosive Cracking by Refining It With Synthetic Slag"

Kiev, Fiziko-Khimicheskaya Mekhanika Materialov, Vol 7, No 4, 1971, pp 31-33

Abstract: The tendency of carbon steel toward corrosive cracking is determined to a considerable degree by the quantity and sizes of microstructural defects, which are foci of corrosive mechanical cracks. Therefore the refining of steel by liquid synthetic slag in a crucible, which provides purification from harmful admixtures, nonmetallic inclusions, and an increase in density, should decrease its sensitivity to corrosive cracking. A study was made of the influence of this means of refining upon the stability of low-alloy steel 17G1S against cracking in an alkaline electrolyte and a nitrate electrolyte. One batch of steel was produced by the conventional open-hearth technology, and the other was refined with synthetic slag in a crucible. It

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VASILENKO, I. I., et al, Fiziko-Khimicheskaya Mekhanika Materialov, Vol 7, No 4, 1971, pp 31-33

was established that the refining of low-alloy steel by synthetic slag considerably increases its resistance against corrosive cracking in an alkaline solution and in a nitrate solution. The greater tendency of the steel melted by the conventional open-hearth method to corrosive cracking is caused principally by the presence of a large quantity of considerably large nonmetallic inclusions. 1 figure. 3 tables. 5 references.

2/2

UDC:669.046.558.7:669.015.3

KALINNIKOV, Ye. S., EFROS, D. I., BORODETS, I. V., YABUROV, S. I., IZMANOVA, T. A., and POKROVSKIY, V. A.

"Some Properties of the Ingots of Chrome-Nickel-Molybdenum Steel Treated With Liquid Synthetic Slag and in Vacuum"

Proizvodstvo Chernykh Metallov [Production of Ferrous Metals--Collection of Works], No 75, Metallurgiya Press, 1970, pp 226-234

Translation: Three melts of structural chrome-nickel-molybdenum steel were made in a basic 50-T open hearth furnace. In the ladle, the metal of each melt was treated using one of three versions of technology:

I--refining with liquid synthetic slags;

II--evacuation in the ladle;

III--refining with liquid synthetic slag with subsequent evacuation in the ladle.

The structural and chemical heterogeneity of a 2.85-T ingot and the mechanical properties of the cast metal were studied.

The steel produced by versions I and II were distinguished by low sulfur content, 0.007 and 0.006% respectively, while type II steel had minimum hydrogen content. The structural zones of all ingots were developed practically identically. Ingots of versions I and III showed stability of

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KALININKOV, Ye. S., et al., Proizvodstvo Chernykh Metallov, No 75, Metallurgiya Press, 1970, pp 226-234

chemical composition both in height and in cross section. The steel treated with the synthetic slag differs from the vacuum steel in its higher mechanical properties. Vacuum treatment of the steel after treatment with synthetic slag did not cause a further increase in properties. It is established that the influence of sulfur on the development of non-axial heterogeneity and changes in the mechanical properties of cast steel is more significant than the influence of hydrogen. 7 figures; 6 tables; 6 biblio. refs.

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USSR UDC:669.046.558.7:669.14.018.85

VOINOV, S. G., KALINNIKOV, Ye. S., KHASIN, G. A., FEDOSENKO, F. V., and MOKHIR, YE. D.

"Study of the Quality of Pipe Skelp of Type 20K Steel, Made According to the Ordinary Technology and By Various Versions With Treatment With Liquid Synthetic Slag in the Ladle"

Proizvodstvo Chernykh Metallov [Production of Ferrous Metals--Collection of Works], No 75, Metallurgiya Press, 1970, pp 206-215

Translation: Experiments are described on the development of means for improving the quality of pipe skelp of type 20K steel, produced in ordinary open hearth furnaces according to the ordinary technology and produced with treatment by synthetic slag in the ladle. When the new technology was used, various versions of deoxidation were tested. The effectiveness of the versions of the technology tested were compared on the basis of the results of inspection of blooms, evaluation of the macrostructure, determination of the chemical composition of the steel, evaluation of nonmetallic inclusions, and mechanical tests. It is established that the melting of type 20K steel with treatment with synthetic slag, regardless of the deoxidation treatment used, allows the production of pipe skelp with low sulfur content, free of nonmetallic inclusions, with compact macrostructure and high mechanical properties, particularly across the

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USSR UDC:669.046.558.7:669.14.018.85

VOINOV, S. G., KALINNIKOV, Ye. S., KHASIN, G. A., FEDOSENKO, F. V., and MOKHIR, YE. D.

"Study of the Quality of Pipe Skelp of Type 20K Steel, Made According to the Ordinary Technology and By Various Versions With Treatment With Liquid Synthetic Slag in the Ladle"

Proizvodstvo Chernykh Metallov [Production of Ferrous Metals--Collection of Works], No 75, Metallurgiya Press, 1970, pp 206-215

Translation: Experiments are described on the development of means for improving the quality of pipe skelp of type 20K steel, produced in ordinary open hearth furnaces according to the ordinary technology and produced with treatment by synthetic slag in the ladle. When the new technology was used, various versions of deoxidation were tested. The effectiveness of the versions of the technology tested were compared on the basis of the results of inspection of blooms, evaluation of the macrostructure, determination of the chemical composition of the steel, evaluation of nonmetallic inclusions, and mechanical tests. It is established that the melting of type 20K steel with treatment with synthetic slag, regardless of the deoxidation treatment used, allows the production of pipe skelp with low sulfur content, free of nonmetallic inclusions, with compact macrostructure and high mechanical properties, particularly across the

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APPROVED FOR RELEASE: 07/20/2001 CIA-RDP86-00513R002201210006-7"

USSR UDC 669.24

KALLIOVICH, D. F., KOVENSKIY, N. I., and SHOLIN, M. D., Institute of Problems of Material Science, Academy of Sciences Ukrainian SSR

"Determination of the Degree of Nickel Atom Ionization in a Ni-Cr Alloy"

Sverdlovsk, Fizika Metallov i Metallovedeniye, Vol 33, No 2, Feb 72, pp 428-429

Abstract: An evaluation of nickel ion charge was made for an alloy of nickel containing 25 wt% Cr. The method of electron transfer was used to determine the sign and magnitude of the charge. Samples were mixed in an atmosphere of neutral gas and a d.c. current passed through them to develop an electrical field while simultaneously heating them to the required temperature. Data from processes of annealing the alloy samples several times made it possible to plot three curves from which the diffusion coefficients could be calculated. With the aid of the same curves it was possible to determine the rate of migration v^* and then the partial rates of electron transfer v. Determination of the magnitude of the effective charge z^* was made using the following equation:

$$z^* = z + b(1/T + \rho_0/\alpha)$$

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USSR

KALINOVICH, D. F., et al., Fizika Metallov i Metallovedeniye, Vol 33, No 2, Feb 72, pp 428-429

where z is the degree of nickel atom ionization, b is the coefficient in which enters the cross section of the current carrier dissipation to the migrating ions, ρ_0 and α are the parameters of the electrical resistance temperature relationship. The calculated results for z showed that nickel atoms in the investigated alloy have a positive charge close to unity in magnitude. One table, 9 bibiliographic references.

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1/2 037 UNCLASSIFIED PROCESSING DATE--20NOV70

TITLE--ACCEPTOR ROLE OF MOLYBDENUM IN AN ALLOY WITH NICKEL -U-

AUTHOR-(04)-KALINOVICH, D.F., KOVENSKIY, I.I., SMOLIN, M.D., STATSENKO, V.M.

COUNTRY OF INFO--USSR

SOURCE--FIZ. METAL METALLOVED. 1970, 29(3), 653-5

DATE PUBLISHED--------70

SUBJECT AREAS--MATERIALS, PHYSICS

TOPIC TAGS--MOLYBDENUM CONTAINING ALLOY, NICKEL ALLOY, IONIZATION, ELECTRON ACCEPTOR, ELECTRON DONOR, NICKEL ISOTOPE, MOLYBDENUM ISOTOPE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--3001/0341 STEP NO--UR/0126/70/029/003/0653/0655

CIRC ACCESSION NO--AP0126097

UNCLASSIFIED

2/2 037 UNCLASSIFIED PROCESSING DATE--20NOV70

CIRC ACCESSION NO--AP0126097

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. BY USING RADIOACTIVE PRIME63 NI AND PRIME99 MO AND THE METHOD OF ELECTRON TRANSFER, THE SIGN AND IONIZATION DEGREE OF MO ATOMS IN THE ALLOY NI,MO 20 AT. PERCENT AT 950-1300DEGREES WERE DETD. EQUATIONS WERE OBTAINED FROM THE TEMP. DEPENDENCE OF MO AND NI DIFFUSION COEFFS. THE FOLLOWING VALUES WERE DETD. FOR THE EFFECTIVE CHARGE OF THE MIGRATING IONS, TAKING INTO CONSIDERATION ALL FORCES WHICH MAY ACT ON THE IONS DURING ELECTRON TRANSFER FOR NI AND MO (1ST AND 2ND FIGURES, RESP.): AT 950DEGREES 38.8, NEGATIVE 9.90 ESU, 2.95 TIMES 10 PRIME NEGATIVE10, 4.05 TIMES 10 PRIME NEGATIVE10 CM PRIME2-SEC; AT 1050DEGREES 37.5, NEGATIVE 9.45 ESU, 1.29 TIMES 10 PRIME NEGATIVE9, 1.86 TIMES 10 PRIME NEGATIVE9 CM PRIME2-SEC; AT 1150DEGREES 36.3, NEGATIVE 8.96 ESU, 5.30 TIMES 10 PRIME NEGATIVE9, 6.83 TIMES 10 PRIME NEGATIVE9 CM PRIME2-SEC; AT 1300DEGREES 33.5, NEGATIVE 8.23 ESU, 2.86 TIMES 10 PRIME NEGATIVE8, 3.47 TIMES 10 PRIME NEGATIVE8 CM PRIME2-SEC. THE VALUES OF THE EFFECTIVE CHARGE FOR NI AND MO INDICATE A DONOR ACCEPTOR INTERACTION. FACILITY: INST. PROBL. MATERIALOVED., KIEV, USSR.

UNCLASSIFIED

1/2 023 UNCLASSIFIED PROCESSING DATE--16OCT70

TITLE--STATE OF NICKEL ATOMS IN A NICKEL MOLYBDENUM ALLOY -U-

AUTHOR-(03)-KALINOVICH, D.F., KOVENSKIY, I.I., SMOLIN, M.D.

COUNTRY OF INFO--USSR

SOURCE--FIZ. TVERD. TELA 1970, 12(3), 929-31

DATE PUBLISHED-------70

SUBJECT AREAS--MATERIALS, NUCLEAR SCIENCE AND TECHNOLOGY

TOPIC TAGS--NICKEL ALLOY, MOLYBDENUM, SOLID SOLUTION, NICKEL ISOTOPE, RADIOACTIVITY

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1995/1290 STEP NO--UR/0181/70/012/003/0929/0931

CIRC ACCESSION NO--AP0116752

UNCLASSIFIED

2/2 023 UNCLASSIFIED PROCESSING DATE--16OCT70

CIRC ACCESSION NO--AP0116752

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. IN NI-23 AT. PERCENT MO, THE CHARGE ON THE NI IONS WAS DETD. FROM ELECTROTRANSPORT AT 1100-1300DEGREES, I.E., IN THE REGION OF EXISTENCE OF A SOLID SOLN. WIRE SECTIONS 70 MM LONG AND 0.45 MM IN DIAM. WERE USED. ON THE CENTRAL SECTION OF THE SPECIMEN, 3 MM LONG, A THIN LAYER OF PURE NI CONTG. RADIOACTIVE PRIME63 NI WAS ELECTRODEPOSITED. DISTRIBUTION OF RADIOACTIVITY WAS MEASURED ALONG THE LENGTH OF THE SPECIMENS. FROM THESE CURVES, THE PARTIAL VELOCITY OF ELECTROTRANSPORT AND THE DIFFUSION COEFF. AT THE TEMP. OF THE EXPT. WERE DETD. ALSO, THE VELOCITY OF MIGRATION OF THE RADIOACTIVE ZONE DURING ANNEALING WAS DETD. THE VALUES OBTAINED ARE TABULATED. FACILITY: INST. PROBL. MATERIALOVED., KIEV, USSR.

UNCLASSIFIED

1/2 019 UNCLASSIFIED PROCESSING DATE--30OCT70

TITLE--DEVELOPMENT AND APPLICATION OF AN ELECTRON TRANSFER TECHNIQUE FOR DETERMINING THE BASIC PARAMETERS OF A METALLIC STATE -U-

AUTHOR-(04)-FRANTSEVICH, I.M., KALINOVICH, D.F., KOVENSKIY, I.I., SMOLIN, M.O.

COUNTRY OF INFO--USSR

SOURCE--AKADEMIIA NAUK UKRAINS'KOI RSR, VISNIK, VOL. 34, MAR. 1970, P. 24-33

DATE PUBLISHED-------70

SUBJECT AREAS--PHYSICS

TOPIC TAGS--METAL CONDUCTIVITY, CARRIER DENSITY, ELECTRON MOBILITY, BINARY ALLOY, ELECTRON INTERACTION

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1996/0932 STEP NO--UR/0455/70/034/000/0024/0033

CIRC ACCESSION NO--AP0118098

UNCLASSIFIED

2/2 019 UNCLASSIFIED PROCESSING DATE--30OCT70

CIRC ACCESSION NO--AP0118098

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. DISCUSSION OF A THEORETICAL BASIS FOR A METHOD OF DETERMINING THE BASIC METALLIC STATE CHARACTERISTICS OF A MEDIUM, SUCH AS METALLIC ION CHARGES, ELECTRON AND HOLE CONCENTRATIONS, CURRENT CARRIER SCATTERING CROSS SECTIONS AND THE TEMPERATURE PARAMETERS OF ELECTRON AND HOLE CONDUCTIVITIES. THE METHOD IS BASED ON CERTAIN RELATIONS BETWEEN THESE VARIABLES. THE EXISTENCE OF THESE RELATIONS IS SUGGESTED BY AN ELECTRON TRANSFER THEORY DEVELOPED BY KUZ'MENKO AND KHAR'KOV (1960) IN A TWO ZONE QUANTUM MODEL APPROXIMATION. EXAMPLES OF THE PRACTICAL IMPLEMENTATION OF THIS METHOD ARE GIVEN FOR SEVERAL BINARY ALLOYS.

UNCLASSIFIED

1/2 029 UNCLASSIFIED PROCESSING DATE--30OCT70
TITLE--DEGREE OF IONIZATION OF MOLYBDENUM ATOMS IN A NICKEL MOLYBDENUM SOLID SOLUTION -U-
AUTHOR-(02)-KALINOVICH, D.F., KOVENSKIY, I.I.

COUNTRY OF INFO--USSR

SOURCE--FIZ. METAL. METALLOVED. 1970, 29(3), 67-1

DATE PUBLISHED-------70

SUBJECT AREAS--MATERIALS, PHYSICS

TOPIC TAGS--NICKEL ALLOY, MOLYBDENUM ALLOY, SOLID SOLUTION, IONIZATION, METAL DIFFUSION

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1998/0942 STEP NO--UR/0126/70/029/003/0671/0672

CIRC ACCESSION NO--AP0121544
UNCLASSIFIED

2/2 029 UNCLASSIFIED PROCESSING DATE--30OCT70
CIRC ACCESSION NO--AP0121544
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. A SOLID SOLN. OF MO (23 AT.PERCENT MO) IN NI WAS STUDIED AT 100-1300DEGREES, I. E. IN THE SOLID SOLN. REGION. THE EFFECTIVE CHARGE OF THE MO IONS WAS THE FUNDAMENTAL PARAMETER DETD. THE DIFFUSION COEFFS. WERE CALCD. FOR ALL EXPTL. TEMPS. FROM THE DISTRIBUTION CURVES FOR THE ACTIVITIES. THE EXPTL. MEASUREMENTS SHOWED A LINEAR TEMP. DEPENDENCES OF THE ELEC. RESISTIVITY. THE SIGN AND THE EFFECTIVE CHARGE VALUES OBTAINED ATTEST TO THE FACT THAT THE MAGNITUDE AND THE DIRECTION OF THE ELECTROTRANSPORT EFFECT OF MO IN THE GIVEN ALLOY ARE DETD. PRIMARILY BY THE SCATTERING OF HOLES ON ITS IONS, ENTRAINING THEM TOWARD THE SIDE OF THE CATHODE.
FACILITY: INST. PROBL. MATERIALOVED., KIEV, USSR.

UNCLASSIFIED

Acc. Nr. AP0029116 Ref. Code: UR 0246

PRIMARY SOURCE: Zhurnal Nevropatologii i Psikhiatrii, 1970, Vol 70, Nr 1, pp 55-60

OTONEUROLOGICAL SYMPTOMATOLOGY IN LATERAL AMYOTROPHICAL SCLEROSIS

Kalinovskay, I. Ya.; Bunina, T. L.

The report concerns an otoneurological study of 127 patients with lateral amyotrophical sclerosis. Disorders of swallowing were registered in 51.99%, of the soft palate in 55.90% disorders of the pharyngeal reflex in 57.84%. As a rule, there was an increased pharyngeal reflex in combination with a distinct paresis of the soft palate. A supranuclear paresis of the soft palate may be the only initial symptom in a bulbar form of lateral amyotrophical sclerosis. The hearing functions in this disease were affected quite rareli (12.7%). A spontaneous nystagm of a stem nature was seen in 18.8%. The optokinetical nystagmus (2.37%) and vertigo (5.5%) were encountered very rarely. The experimental nystagmus was either normal or there was a hyporeflexia and only in separate cases. An otoneurological study supplements the clinical picture, facilitates the differential diagnosis and extends our concepts of the topical process.

REEL/FRAME

19680627

1/2 022 UNCLASSIFIED PROCESSING DATE--30OCT70

TITLE--COMPARATIVE CHARACTERISTICS OF SOME TYPES OF ANESTHESIA AFTER ACTIVITY OF SERUM LACTATEDEHYDROGENASE ISOENZYMES -U-

AUTHOR-(05)-DANILENKO, M.V., BORZHIYEVSKIY, TS.K., BABLYAK, D.YE., KALINOVSKAYA, L.S., LUCHKO, A.S.

COUNTRY OF INFO--USSR

SOURCE--VRACHEBNOYE DELO, 1970, NR 4, PP 139-142

DATE PUBLISHED--------70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--ANESTHESIA, LACTATE DEHYDROGENASE, STOMACH, SURGERY, LIVER

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--3002/1699 STEP NO--UR/0475/70/000/004/0139/0142

CIRC ACCESSION NO--AP0129069

UNCLASSIFIED

2/2 022 UNCLASSIFIED PROCESSING DATE--30OCT70

CIRC ACCESSION NO--AP0129069

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. LACTATEDEHYDROGENASE WAS STUDIED IN PATIENTS UNDERGOING GASTRIC RESECTION WITH THREE TYPES OF ANESTHESIA. IT WAS FOUND THAT ALTERATIONS OF TOTAL LACTATEDEHYDROGENASE INDEPENDENT OF THE FORM OF ANESTHESIA ARE CONNECTED WITH CHANGES OF ITS LIVER FRACTION. THE DYNAMICS OF LIVER LACTATEDEHYDROGENASE LARGELY DEPENDED ON THE ANESTHESIA TYPE. IN THIS RESPECT TRICHLOETHYLENE PROVED MORE SPARING THAN CHLOROFORM AND CYCLOPROPROPANE. FACILITY: L'VOVSKOGO MEDITSINSKOGO INSTITUTA.

UNCLASSIFIED

USSR UDC 8.74

ADEL'SON-VEL'ŞKIY, G. M., VOROPAYEV, V. I., KALINOVSKAYA, S. S.

"Problems of Software for Automated Control Systems for Water Conservation Construction"

V sb. Mat. metody v ekon. (Mathematical Methods in Economics--collection of works), Vyp. 9, Riga, Zinatne, 1972, pp 33-75 (from RZh-Kibernetika, No 12, Dec 72, Abstract No 12V478)

Translation: A study was made of some of the principles of constructing the software for automated control systems. It is proposed that the problems of the automated control system be classified with respect to mathematical techniques used for their solution. Primary attention has been given to the statement of the problems of solving the balance equations with respect to unfixed formulas, the problems of optimization solved by the methods of mathematical programming (selection of the orders and their distribution among the contract organizations, optimization of the technological process of the basic types of construction operations, and so on), and the problems of operative (calendar) planning. Some mathematical models are presented in the article which were developed for solving the mentioned problems. The authors present examples of the structural description of the information available in the automated control system on the objects of control, and they also present a description of the

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USSR

ADEL'SON-VEL'SKIY, G. M., et al., Mat. metody v ekon., Vyp. 9, Riga, Zinatne, 1 1972, pp 33-75

basic types of programs of the information part of the automated control system. The problems connected with automation of programming are also reflected. The bibliography has 21 entries.

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USSR

UDC 532.5

KALINSKAYA, L. B.

"Results of a Study of the Longitudinal Dimensions of a Water Jump in a Tube of Circular Cross Section"

Tr. Novocherkas. politekhn. in-ta (Works of Novocherkassk Polytechnical Institute), 1971, Vol. 230, pp 31-38 (from RZh-Mekhanika, No 3, Mar 72, Abstract No 3B561)

Translation: The results of an experimental study of the length of a hydraulic jump formed in a cylindrical horizontal tube of circular cross section are given. Laboratory experiments were conducted for a water flow from under a gate into a tube of diameter 100 mm and length 1700 mm and a head ahead of the gate of up to 1100 mm. The length of the jump l was measured as the length of the horizontal projection of the surface roll. The following formulas are recommended for determining l: for ideal and compressed jumps

$$\lambda = (\gamma_2 - \gamma_1)^2/0.26k_B(\gamma_2 - \gamma_{cr})$$

and for a head jump

$$\lambda = 7.5\gamma_0^{3/4}\sqrt{\gamma_0}\left(\frac{\pi}{\sigma_c} - 1\right)^3$$

1/2

USSR

KALINSKAYA, L. B., Tr. Novocherkas. politekhn. in-ta, 1971, Vol. 230, pp 31-38

where $\gamma = l/r$, $\gamma_1 = h_1/r$, $\gamma_2 = h_2/r$, $\gamma_{cr} = h_{cr}/r$, $\gamma_0 = a/r$, $\sigma_0 = \omega_0/r^2$, h_1 and h_2 are conjugate depths of the jump, h_{cr} is the critical depth, a is the opening of jump, ω_0 is the area of the jump opening, r is the radius of the tube, $k_0 = f(\gamma_1\gamma_2)$ is the coefficient of the effect of the arched surface of the tube on the length of the jump. 5 ref. V. B. Dul'nev.

2/2

USSR

UDC 621.378.325

ANDREYEV, R.B., VOLOSOV, V.D., KALINTSEV, A.G.

"Some Peculiarities Of The Generation Of Second Harmonics In A Lithium Methaniobate Crystal"

Kvantovaya elektronika (Quantum Electronics), Moscow, No 6(12),1972, pp 44-49

Abstract: The paper investigates the temperature dependences of the synchronism angle, the synchronism angular width, the dispersion of the synchronism direction, and the temperature derivative of the synchronism direction during second harmonic generation in a $LiNbO_3$ crystal. The optical scheme is shown of an experimental unit for investigation of these parameters. The values are theoretically calculated of the parameters K_α and B_α which are the first and second members, respectively, in the phase tuning expansion with respect to the angle of deflection from the synchronism direction. An evaluation is made of the applicability of a linear approximation at various values of the synchronism angle. A 10-time increase was discovered of the dispersion of the synchronism direction, and a 20-time increase of the temperature derivative of the synchronism direction at an approximation to 90° synchronism. Nd-laser generation of second harmonics with an efficiency of ~40 percent was obtained. In the

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ANDREYEV, R.B., et al, Kvantovaya elektronika, Moscow, No 6(12),1972, pp 44-49

process, induction inhomogeneity of the refraction index of the crystal was not observed. Curves are shown of the following: 1) Calculated dependences of the parameters K_α, B_α, and the wavelength of the exciting radiation on the values of the synchronism angle in a $LiNbO_3$ crystal with its temperature 25° C; 2) Experimental dependance of the angular synchronism width; 3) Experimental dependence of the parameter K_α on the synchronism angle; and 4) Dependence of the efficiency of second harmonic generation of radiation in $LiNbO_3$ on the density of the radiated power at the crystal. The authors deeply thank M.P. Vanyukov for attention and interest in the work. 6 ill. 7 ref. Received by editors, 28 Dec 1970; after revision, 12 Oct 1971.

2/2

USSR UDC 536.421.4+536.421.1

LOZOVSKIY, V. N., GERSHANOV, V. Yu., KALINYUK, A. I., NIKOLAYEVA, Ye. A., POPOV, V. P., and UDYANSKAYA, A. I.

"Basic Laws of Silicon Crystallization for a Zone Melt With a Temperature Gradient"

V sb. Kristallizatsiya i faz. prevrashcheniya (Crystallization and Phase Transformations -- collection of works), Minsk, "Nauka i tekhn." 1971, pp 91-97 (from RZh-Fizika, No 9, 1971, Abstract No 9E382)

Translation: The kinetics of a zone melt with a temperature gradient are experimentally investigated in Si-Al, Si-Ag, Si-Au, Si-Fe, Si-Cu, Si-Ni, Si-Sn, Si-Pt systems. Curves expressing the dependence of the liquid zone migration rate on its thickness and temperature are obtained for these systems, the values of the activation energy of zone movement are found, and the effect of the third component on the zone velocity is determined; it is established that, in the region of fine zones and small temperature gradients, the stability of the zone movement is independent of the anisotropy of the solution and the crystallization; in the opposite case the morphology of the zone is determined by slowly dissolving planes of the (111) type. Author's abstract
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USSR

UDC 621.315.592.054.2

LOZOVSKIY, V. N., KALINYUK, A. I., and POLITOVA, N. F.

"Experimental Investigation of the Kinetics of Zone Melting With Temperature Gradient in the System Si-Al-Sn"

Tr. Novocherk. politekhn. in-ta (Works of the Novocherkassk Polytechnical Institute), 1970, 208, pp 34-38 (from RZH-Metallurgiya, No 11, Nov 70, Abstract No 11G385)

Translation: For conducting zone melting with temperature gradient in the system Si-Al-Sn, flat zones are used in the form of foil, made of Al-Sn alloy with 20 to 80% Si, and Si of the brand KEF with resistivity of 20-30 ohm·cm in the form of rectangular parallelepiped 1 x 4 x 8 mm. The zone melting with temperature gradient is carried out in a vacuum gradient furnace. The temperature gradient is estimated on the basis of special measurements conducted on model specimens without zone, but within the same temperature interval and under the same geometrical conditions as the specimens. The temperature dependence of the rate of migration of the liquid zone of Si-Al-Sn disregarding the composition is well approximated by the exponential function in the temperature range 700-1000°. The preexponential multiplier depends on the zone composition and temperature gradient, and the indicator of the degree of the

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USSR

LOZOVSKIY, V. N., et al., Tr. Novocherk. politekhn. in-ta, 1970, 208, pp 34-38 (from RZH-Metallurgiya, No 11, Nov 70, Abstract No 11G385)

exponent diminishes with increased concentration of Sn in the liquid zone. This fact corresponds well with the decrease in activation energy of the process of diffusion of Sn atoms in Sn-Al melt during the increase of Sn concentration. 12 bibl. entries.

YU. Zotov

2/2

USSR UDC 621.315.592.3:669.782

IDZOVSKIY, V. N., KALINYUK, A. I., and BUDDO, V. I.

"Zone Melting With a Temperature Gradient in the System Silicon-Tin"

Tr. Novocherk. politekhn. in-ta (Works of the Novocherkassk Polytechnical Institute), 1970, 208, pp 50-54 (from RZH-Metallurgiya, No 11, Nov 70, Abstract No 11G387)

Translation: Results are presented of an experimental investigation of the patterns of motion of Sn-Si melted zone in Si single crystals. Sn with 99.999% purity and Si KEF with a resistivity 20-30 ohm·cm were used. The specimens had the shape of rectangular parallelepipeds 0.5-1 mm thick with a 4 x 8 mm area, and were cut out along the facet (111). The tin zones, in the form of foil, were placed between two specimens, one of which in the process of zone melting with temperature gradient was melted, while the second served as a seed charger. The obtained composition was first placed into a vacuum furnace for doping. The zone melting was conducted in a special vacuum gradient furnace under conditions when convection in the liquid phase could not be developed. The results coincided with the Tiller theory. 2 ill., 9 bibl, entries.

O. Myakisheva

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USSR

UDC: 534.86

PRIALGAUSKAS, S., KALIS, R.-I., and DOMARKAS, V.

"Electrical Modeling of Ultrasonic Piezo-Converters in the Form of Plates"

Nauch. tr. vyssh. ucheb. zavedeniy LitSSR. Ul'trazvuk (Scientific Works of the Lithuanian VUZ; Ultrasonics) No 4, 1972, pp 47-54 (from RZh—Fizika, No 4, 1973, Abstract No 4Zh671)

Translation: A method is described for modeling the frequency and pulse characteristics of a piezo-converter in the form of plates, using an equivalent circuit without feedback capacitance. It is shown that modeling a piezo-converter with a high electromechanical coupling coefficient in such a simplified system requires adjustment of the delay time of the electrical delay lines used in the model. The circuit of the model is given, along with formulas for computing the elements of the system. The theoretical conclusions are illustrated by experimental data. Authors' abstract

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1/2 018 UNCLASSIFIED PROCESSING DATE--23OCT70

TITLE--THERMAL STABILITY OF OXYTOCIN IN AQUEOUS SOLUTIONS AND IN THE PRESENCE OF GLUCOSE, SUCROSE, GLYCINE, AND SODIUM CHLORIDE -U-

AUTHOR-(02)-KALIS, V., KIRILLOVA, YE.A.

COUNTRY OF INFO--USSR

SOURCE--LATV. PSR ZINAT. AKAD. VESTIS, KIM. SER. 1970, (1), 29-32

DATE PUBLISHED-------70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--HORMONE, THERMAL STABILITY, GLUCOSE, SUCROSE, GLYCINE, SODIUM CHLORIDE, ANTIBIOTIC/(U)OXYTOCIN ANTIBIOTIC

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1988/0014 STEP NO--UR/0464/70/000/001/0029/0032

CIRC ACCESSION NO--AP0105114

UNCLASSIFIED

2/2 018 UNCLASSIFIED PROCESSING DATE--23OCT70

CIRC ACCESSION NO--AP0105114

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. WHEN 5 ML ALIQUOTS OF OXYTOCIN (91.7 IU-ML) IN AQ. SOLN. ACIDIFIED WITH ACOH WAS EVAPD. TO DRYNESS IN A ROTARY EVAPORATOR AT 20 MM ON A WATER BATH AT 35DEGREES, ALONE OR WITH THE ADDN. OF 3.0 G GLUCOSE, 5.5 G SUCROSE, 1.1 G GLYCINE, OR 0.9 G NACL, THE REMAINING ACTIVITIES AS PERCENT OF THE ORIGINAL WERE, RESP.: 38, 74, 93, 100, AND 95. WHEN 1 ML ALIQUOTS WITHOUT ADDITIVES IN SEALED AMPULS WERE STERILIZED BY HEATING 45 MIN AT 100DEGREES, 30 MIN AT 110DEGREES, OR 15 MIN AT 120DEGREES, THE ACTIVITIES WERE, RESP.: 61, 99, AND 100PERCENT OF THE ORIGINAL. FACILITY: INST. ORG. SIN., RIGA, USSR.

UNCLASSIFIED

UDC: 669.018.6:536.41

USSR

KRENTSIS, R. P., KALISHEVICH, G. I., GEL'D, P. V., and ANDREYEVA, L. P.

"Thermal Expansion of Chromium, Manganese, Iron, and Cobalt Silicides"

Tomsk, Izvestiya VUZ--Fizika, No 1, 1972, pp 153-155

Abstract: This brief communication gives the results of measurements made by the authors of the coefficients of linear expansion of various specimens as a function of heat in a temperature range of 100 to 1000° K. The specimens were chromium, manganese, iron, and cobalt silicides having the same cubic structure of the B20 type. The specimens were made of 99.98% Cr by weight; 99.95% Mn; 99.95% Fe; 99.98 Co; and monocrystalline silicon, 99.997% Si in an induction furnace of the MVP-3M type, in an argon atmosphere. After alloying, the specimens were sucked up in quartz capillary tubes 3-4 mm in diameter. The errors made in the measurements did not exceed 2-3%, except for the lowest temperature region of 100-200° K, when the error amounted to 4-5%. Curves are given for the expansion coefficients as functions of the temperature, and a table giving some characteristics of the four types of monosilicides is presented. The authors are connected with the S. M. Kirov Ural Polytechnical Institute.

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KALISHEVICH, Yu. I.

JPRS 55302

29 February 1972

USSR 621.039.7+621.039.5

DISTINCTIVE FEATURES IN THE ANALYSIS OF CYCLES OF GAS-TURBINE ATOMIC POWER PLANTS

[Article by Candidate of Technical Sciences G.F. Smirnov, Engineer A.M. Klok, and Engineer Yu. I. Kalishevich of the Odessa Technological Institute imeni M.V. Lomonosov] Moscow, Energiya Vyssheye Uchebnoye Zavedeniya: Energetika, Russian, No 12, December 1971, submitted 26 June 1969, pp 51-56]

Experience in the development of atomic power engineering in England, France, and Italy testifies to the prospectiveness of gas-graphite reactors.

The level of temperatures of 650-700°C and pressures of 30-40 atmospheres already achieved today [1] permits hoping for the use, in combination with atomic reactors, of gas-turbine installations working on a single-circuit scheme [2].

Few works have been devoted to the question of thermodynamic analysis of the cycles of single-circuit gas-turbine atomic power plants. At the same time, in the case of analysis of gas-turbine atomic power plants there are important differences as compares with such installations using organic fuel.

In spite of the fact that efficiency plays a smaller role methods of thermodynamic analysis can prove to be necessary under certain conditions.

Depending on the purpose of the installation (stationary, transportable, or special), the stages of analysis (preliminary, rough, etc.), the presence of prototype design solutions and comparisons of the reactor, the geometry of the fuel elements and technological channels, etc, the distinctive features of the thermodynamic analysis can vary. This can be a stationary atomic power plant a condition of the analysis can be maximum efficiency at a fixed volume of the reactor core. For a transportable atomic power plant the maximum efficiency of the reactor core. For a transportable atomic like installation as a whole can be such a condition. Besides

[I - USSR - K]

1/2 026 UNCLASSIFIED PROCESSING DATE--04DEC70
TITLE--INVERSE CORRELATION BETWEEN THE FUNCTIONAL ACTIVITY OF AN ANTICOAGULATING SYSTEM AND THE DEVELOPMENT OF A NEOPLASM IN THE ORGANISM
AUTHOR-(03)-KUDRYASHOV, B.A., KALISHEVSKAYA, T.M., KOLOMINA, S.M.

COUNTRY OF INFO--USSR

SOURCE--VESTN. MOSK. UNIV., BIOL., POCHVOVED. 1970, 25(2), 16-43

DATE PUBLISHED--------70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--NEOPLASM, BLOOD COAGULATION, FIBRINOLYSIS, ANTICOAGULANT DRUG, RAT, MOUSE, NERVOUS SYSTEM DRUG, CHLORPROMAZINE, HEPARIN, DOG, CARCINOMA, REPRODUCTIVE SYSTEM

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY FICHE NO----FD70/605008/D09 STEP NO--UR/0444/70/025/002/0016/0043

CIRC ACCESSION NO--AP0139983

UNCLASSIFIED

2/2 026 UNCLASSIFIED PROCESSING DATE--04DEC70

CIRC ACCESSION NO--AP0139983

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. AS THE GROWTH OF NEOPLASMS APPEARS TO BE ACCOMPANIED BY A STIMULATION OF THE BLOOD CLOTTING MECHANISM, THE EFFECTS OF ANTICOAGULANTS AND FIBRINOLYTIC AGENTS ON TUMOR BEARING RATS AND MICE WERE INVESTIGATED. BLOOD ANALS. SHOWED A 3-4 FOLD INCREASE IN FIBRINOGEN CONTENT, A DECREASE IN FIBRINOLYTIC ACTIVITY (0-2PERCENT VS. 10-12PERCENT IN CONTROLS), AND A SHORTENED CLOTTING TIME. TREATMENT OF TUMOR BEARING MICE WITH HEPARIN OR FIBRINOLYSIN, ALONE OR IN COMBINATION, DID NOT PRODUCE A CONSISTENT REDN. IN TUMOR GROWTH, ACTUALLY PROMOTING GROWTH IN SEVERAL ANIMALS. HOWEVER, BLOCKING OF THE VEGETATIVE NERVOUS SYSTEM WITH CHLORPROMAZINE DURING ANTICOAGULANT AND FIBRINOLYTIC TREATMENT LED TO A SIGNIFICANT REGRESSION OF TUMORS. THUS, DAILY ADMINISTRATION OF 2000 UNITS HEPARIN-KG AND 8000 UNITS FIBRINOLYSIN'KG AFTER TUMOR TRANSPLANTATION PRODUCED AT 51-96PERCENT DEPRESSION OF TUMOR GROWTH IF THIS TREATMENT WAS SUPPLEMENTED BY THE ADMINISTRATION OF CHLORPROMAZINE. A SIGNIFICANT DECREASE IN METASTASES WAS ALSO OBSD. CHLORPROMAZINE ADMINISTERED ALONE PRODUCED A LOWER AND LESS CONSISTENT REGRESSION OF TUMORS. HISTOPATHOL. STUDIES CONFIRMED THE BENEFICIAL EFFECT OF THE COMBINED ANTICOAGULANT CHLORPROMAZINE TREATMENT. THIS DRUG COMBINATION WAS APPLIED WITH SUCESS TO THE TREATMENT OF A DOG WITH SPONTANEOUS ADENOCARCINOMA OF THE MAMMARY GLANDS.

UNCLASSIFIED

USSR

UDC: 532.526

KALISHEVSKIY, L. L., NIKITUSHKINA, G. P., STREL'TSOV, V. Ya.

"Experimental Investigation of a Turbulent Boundary Layer in the Case of Intensive Blow-in"

Tr. Mosk. vyssh. tekhn. uch-shcha im. N. E. Baumana (Works of the Moscow Higher Technical Academy imeni N. E. Bauman), 1971, No 144, pp 80-87 (from RZh-Mekhanika, No 5, May 72, Abstract No 5B970)

Translation: The article deals with analysis of the results of an experimental study of an isothermal boundary layer on a porous plate measuring 450 × 50 mm when air is blown into air. The blow-in intensity $(\rho V)_\infty/(\rho U)_\infty$ varied over limits from 0.0008 to 0.022. The velocity of the main flow was ~40 $m \cdot s^{-1}$. There was a slight negative pressure gradient. Included in front of the porous plate was a section $l = 62$ mm without injection, and the boundary layer was suctioned off in front of this section to eliminate the influence of the initial conditions. In the experiments, the thickness distribution of the boundary layer of dynamic and static pressures was measured in 12 sections lengthwise of the plate. The flowrate of the air blown in through the porous plate was determined. The pressure field was taken

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USSR

KALISHEVSKIY, L. L. et al., Tr. Mosk. vyssh. tekhn. uch-shcha im. N. E. Bauman, 1971, No 144, pp 80-87

by pneumometric probes with aperture size of 0.1 mm. Measurement accuracy was ±2%. The velocity field in the boundary layer over the plate was determined on the basis of the measurements. The integral characteristics of the boundary layer were calculated: the displacement thickness δ^*, the impulse loss thickness δ^{**}, the formfactor $H = \delta^*/\delta^{**}$, the coefficient of friction on the plate C_{fw}.

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KALISHEVSKIY, V.L.

Mechanical Engr

SLOK

APPLICATION OF DIMENSIONAL ANALYSIS TO STUDY OF VIBRATION ACTIVITY OF PISTON ENGINES

V. L. Kalishevskiy and [illegible] (Moscow) D 2

The study of vibration activity of mechanisms in analytic form is a complex task and cannot be performed completely without significant simplifications. In an experimental study, the partial dependences of individual parameters are produced. It is difficult to compare the results of tests of mechanisms of various types.

Analysis of the conditions of similarity of mechanisms as to vibration activity allows us to estimate the influence of various technological, design and mode parameters of the machine on its vibration activity, to determine the volume and method of experimental study.

For a system described by the differential equation

$$M\ddot{q} + R\dot{q} + Cq = P_0 \sin \omega t \qquad (1)$$

we can compose the following dimensionless numbers:

$$K_1 = P_0/M\omega_0^2, \quad K_2 = C/M\omega_0^2 = \omega_0^2/\omega^2, \quad K_3 = C/R\omega_0 \qquad (2)$$

The criteria K_2 and K_3 characterize the properties of the system (inertial, rigid and damping characteristics) and determine the similarity of the data of the system. Complex K_1 expresses the relationship between the perturbing force and the vibration which it causes.

Since the level of vibration is measured relative to a threshold vibration acceleration q_0, we can write:

$$L = f(P_0/M\omega_0^2, \omega_0/\omega, C/R\omega_0). \qquad (3)$$

Consequently, for this system the dimensionless number for vibration activity is defined as

$$L = idem$$

where

$$\frac{P_0}{M\omega_0^2} = idem; \quad \frac{\omega_0}{\omega} = idem; \quad \frac{C}{R\omega} = idem. \qquad (4)$$

SO: NASA Technical Translation F-644 May 1972

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RMM/IR-760/S-MMP/73

Dec 72

KALISKIY S.

103

Kaliski, S. Cumulation of plasma and magnetic field during explosion of a heavy conductive shell. Biul. WAT J. Dabrowskiego, v. 20, no. 11, 1971, 9-16 (RZhF, 4/72, #4G16).

The problem of combining plasma cumulation with that of the initial magnetic field during an explosion oriented toward the center of a system is treated by the method of averaging. A solution is presented to equations of plasma motion in a magnetic field and an equation of energy in plane and cylindrical systems. Using a general solution, separate boundary conditions are derived for cumulation of the magnetic field or the plasma. The description of the boundary condition of plasma cumulation alone by the method of averaging is considered meaningless, however, without allowance for additional sources (e.g. lasers, magnetic fields, and mechanical pressure) acting upon the plasma.

Kaliski, S. Cumulation of a plane electromagnetic field at relativistic initial velocities of a conductive shell. Biul. WAT J. Dabrowskiego, v. 20, no. 11, 1971, 17-23. (RZhF, 4/72, #4G7).

The problem of magnetic field cumulation during a field-oriented explosion of a heavy conductive shell is analyzed in an approximation of plane geometry. Quasi-relativistic velocities of the conductive shell wave investigated (the terms of the $(v/c)^2$ order, where v is the shell velocity, are disregarded). Using the method of characteristics, Maxwell equations are solved with a boundary condition formulated by a standard differential equation which describes motion of the shell. In the particular case of $v/c \leq 1$, field cumulation is described by a well-known solution for a quasi-static state.

AA0052686

KALISTRATOV A.M.

UR 0482

Soviet Inventions Illustrated, Section III Mechanical and General, Derwent, 2-70

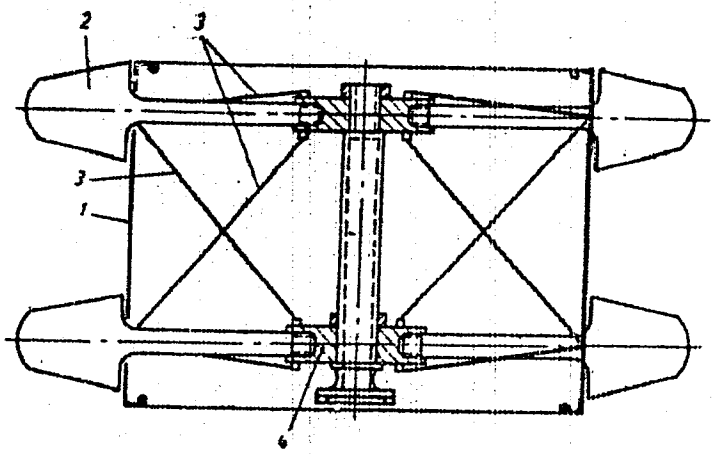
244547 MULTISTAGE VENTILATOR FAN reduces the axial moment of inertia in axial ventilator and turbine fans. In the conventional wheel and blade structures the root of the blade is thickened. In this patent the design of the blade section is improved with rim section 1 having blade 2 with extended root located on hub 4 secured by pins and supported by spokes 3. This design reduces the axial moment of inertia.

30.12.66 as 1122523/24-6 K.I. ZHDANOV et al. (8.10.69) Bul. 18/28.5.69. Class 27c, Int. Cl. F 04d.

19821465

AA0052686

Zhdanov, K.I.; Kazanskiy, B.P.; Kalistratov, A.M.



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19821466

USSR

UDC 547.341.07

KAABAK, L. V., VARSHAVSKIY, S. L., MYAGKAYA, M. YE., KOSHECHKINA, L. A., KALITINA, M. I., and KABACHNIK, M. I.

"Process for the Preparation of Tri-Secondary-Alkylphosphine Oxide"

USSR Author's Certificate No 362024. Filed 18 Jan 71, published 13 Dec 71 (from Otkrytiya, Izobreteniya, Promyshlennyye Obraztsy, Tovarnyye Znaki, No 2, 1873, p 54)

Translation: This process is improved in that white phosphorous reacts with secondary halide alkyls and magnesium or zinc while being heated, with the subsequent treatment of the reaction mixture with alkali. The desired product can be separated by known methods.

2. The process in number 1 is improved in that the mixture is heated to a temperature of 120-210°C.

3. The processes described in number 1 and 2 are improved in that the treatment of the reaction mixture with alkali is carried out at 270°C.

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USSR

UDC 612+159.9]:656.6:658.514

KALITINA, R. M., Institute of Water Transport Hygiene, Moscow

"Effect of River Transport Dispatcher Work on Some Physiological and Mental Functions"

Moscow, Gigiyena Truda i Professional'nyye Zabolevaniya, No 7, 1971, pp 13-17

Abstract: The demands made on short-term memory, distribution and concentration of attention, and rate of information processing have led to the classifying of the work of river transport dispatchers as highly strenuous (4th degree). Sixteen such workers were subjected to a battery of physiological and psychological tests (time of simple and complex reactions to light and sound, threshold of auditory sensitivity, arterial pressure, heart rate, concentration span, and so forth) 4 times during each 12 hour day and night shift both at the beginning of the navigation season in Moscow River ports (May-June) and at the peak (August-September). Maximum deviations in all the functions studied and the greatest decrease in level of performance occurred after 8 hours' work on the day shift and after 4 hours' work on the night shift. The tests during the busy period revealed improvements in memory and attention compared with the start of the period

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USSR

KALITINA, R. M., Gigiyena Truda i Professional'nyye Zabolevaniya, No 7, 1971, pp 13-17

but at the price of a deterioration in general health and sense of well-being (insomnia, irritability, headaches). Recommendations aimed at minimizing fatigue and strain on the nervous system include a shortening of the shifts, use of control panels, and installation of modern communications systems, including television.

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KALITINA, T. A.

JPRS 55320
1 May 72

USSR: 614.31-076:576.858

DEVELOPMENT OF VIROLOGICAL RESEARCH ON HYGIENIC ASPECTS OF ALIMENTARY MICROBIOLOGY

[Article by T.A. Kalitina, Institute of Nutrition, USSR Academy of Medical Sciences, Moscow, Vestnik Akademii Meditsinskikh Nauk SSSR, Russian, No 1, 1972, pp 56-60]

In a report of the WHO Expert Committee dealing with microbiological aspects of hygiene of nutrition (1968), it is stated that it is imperative to investigate problems pertaining to the possible presence of viruses and rickettsia in foods. A series of surveys on this subject have also appeared in the press (Brown; Berg; Lemon' R.A, Kalitina; Oliver, 1969). The authors conclude that viral agents are transmitted through food on the basis of epidemiological analysis of some virus infections. But this has not been corroborated in the laboratory, since we still do not have unified virological methods for examining foods.

Viruses can get into food in different ways. One must distinguish between foods the raw material of which consisted of animals infected before being slaughtered (sick, in the incubation or recovery stages) or foods obtained from such animals, different shellfish, vegetables infected during the growth period.

Another means is infection of foods in the process of obtaining, processing, storing, transporting, and selling.

Farm animals can be infected with different viruses, many of which cause great economic loss to the farm, without being appreciably detrimental to man. These include the pathogens of foot and mouth disease, cholera of swine, African swine fever, Newcastle disease, and others. However, there are viruses that are infective for both animals and man. Cattle and swine are carriers of many enteroviruses. There are data that the enteroviruses of cattle occasionally have a cytopathogenic effect on human cells in tissue cultures (Tamada). There is limited information about cattle and pigs being infected with human enteroviruses, and we can mention the report of isolating poliomyelitis virus from a calf (Koprowski), and data indicating that cattle serum presents antibodies to poliomyelitis virus (Siamese).

USSR UDC 621.317.757:621.391.822

KUDABA, V. YE., PALENSKIS, V. I., KALITIS, R. I., BRAZDZHYUNAS, P. P.

"Spectral Analysis of Current Noise"

Liet. fiz. rinkinys, Lit. fiz. sb. (Lithuanian Physics Collection), 1970, Vol 10, No 4, pp 593-607 (from RZh-Radiotekhnika, No 4, Apr 71, Abstract No 4A275)

Translation: A device for spectral analysis of current noise in the 0.01 Hertz to 10 megahertz range is described. The correlation method of analysis on a computer is used in the infralow frequency range (0.01-1 Hertz). The errors in calculating the correlation function and spectral density as a function of the length of the realization were estimated. Low-noise high-frequency and low-frequency preamplifiers have been developed. A cascade cathode repeater was used at high frequencies to amplify the total input impedance. Stable narrow band amplifiers of the RC and LC type were developed. There are 10 illustrations and a 9-entry bibliography.

1/1

USSR

UDC 533.652/.661.013

KALITIYEVSKIY, L. F.

"Effect of the Forward Velocity on the Aerodynamic Characteristics of a Hovercraft which is Noncircular in the Plan View"

Samoletostr. i tekhn. vozd. flota. Resp. mezhved. nauchno-tekhn. sb. (Aircraft Construction and Air Fleet Engineering. Republic Interdepartmental Scientific and Technical Collection), 1970, No 19, pp 3-5 (from RZh-Mekhanika, No 10, Oct 70, Abstract No 10 B 305)

Translation: The method of calculating the aerodynamic characteristics of hovercraft during forward motion discussed earlier as applied to hovercraft with nozzle assemblies which are round in the plan view (see abstract No 10B304) is extended to hovercraft with an elliptic nozzle. It is considered that the current in the air curtain jet and the oncoming flow around the jet are potential. The pressure distribution with respect to the middle surface of the jet is assumed the same over the surface of a solid elliptic cylinder. Results are presented from calculating the deformation of the jet and the velocity distribution in the jet for cases of progressive motion along the major and minor axes of the ellipse the lengths of which are in the ratio 2:1.

1/2

USSR

KALITIYEVSKIY, L. F., Samoletostr. i tekhn. vozd. flota. Resp. mezhved. nauchno-tekhn. sb., 1970, vyp. 19, pp 3-5.

In the second case the relative deformations of the jet curtain are greater than in the first case by 1.5-1.8 times, and the velocity variations, by 1.2-1.3 times.

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USSR

UDC 533.652/.661.013

KALITIYEVSKIY, L. F.

"Effect of the Forward Velocity on the Aerodynamic Characteristics of a Hovercraft"

Samoletostr. i tekhn. vozd. flota. Resp. mezhved. nauchno-tekhn. sb. (Aircraft Construction and Air Fleet Engineering. Republic Interdepartmental Scientific and Technical Collection), 1970, No 17, pp 3-9 (from RZh-Mekhanika, No 10, Oct 70, Abstract No 10B304)

Translation: This article contains a study of the method of analytical consideration of the effect of the speed of horizontal flight of a hovercraft with a round nozzle in the plan view for cases of cylindrical and conical jet curtains. The calculation technique proposed by the author permits us to obtain the deformations of the jet curtain in the oncoming flow and the velocity distribution law in various cross sections of the curtain. This offers the possibility of determining the basic aerodynamic characteristics of the hovercraft in horizontal flight. The calculation results correspond to the experimental data. The bibliography has 6 entries.

1/1

USSR

UDC 517.9:533.7

GOL'DIN, V. Ya., KALITKIN, N. N., LEVITAN, Yu. L., and ROZHDESTVENSKIY, B. L.

"Computing Two-Dimensional Flows from Detonations"

Moscow, Zhurnal Vychislitel'noy Matematiki i Matematicheskoy Fiziki, No 6, 1972, pp 1606-1611

Abstract: Under the assumption that the explosion of each element of a space in an explosive material occurs instantaneously, a difference method for calculating the two-dimensional gas dynamics resulting from a detonation is developed. It is noted that there is a difficulty in the two-dimensional case that does not exist in the unidimensional case: the strong distortion in the Lagrangian grid occurring in the computation. As a result, only the regions with an axis of symmetry are considered, with the explosion originating at a point on the axis. Three grid configurations spherical, rectangular, and triangular are described. A system of equations for the two-dimensional gas dynamics is given in terms of Lagrange variables, and the structure of the difference system using the quadrangular grid as an example is developed. The results obtained were compared with a known self-modeling solution, and a close agreement between the two was shown.
1/2

USSR

GOL'DIN, V. Ya., et al., Zhurnal Vychislitel'noy Matematiki i Matematicheskoy Fiziki, No 6, 1972, pp 1606-1611

The authors express their appreciation to B. D. Moiseyenko for his discussion of the work and to I. A. Govorukhin for his assistance with its formulation.

2/2

KALITKIN, N.N.

JPRS 58699

10 April 1973

UDC: 517.9:533.7

CALCULATION OF TWO-DIMENSIONAL FLOWS WITH DETONATION

[Article by V. Ya. Gol'din, N.N. Kalitkin, Yu.L. Levitan, N.L. Rozhdestvenskiy; Moscow, Ordena Lenina Institut prikladnoy matematiki Akademii nauk SSSR; Moscow, Zhurnal vychislitel'noy matematiki i matematicheskoy fiziki, Russian, Vol 12, No 6, November-December 1972, signed to press 25 January 1972, pp 1606-1611]

A difference method is developed for calculation of two-dimensional gas-dynamics problems with detonation, using the Lagrange variables. Three versions of difference plans are studied, corresponding to various configurations of the squares of a grid. A comparison is presented with the self-similar solution of the problem of a point explosion, showing the satisfactory accuracy of the calculations.

§ 1. Detonation Model

Two-dimensional detonation develops in a number of problems, for example the explosion of a nonspherical charge, the initiation of an explosion on the surface of a charge, explosion in a compact, limited medium. As we know, detonation is a complex phenomenon [1]. A strong shock wave travels through the explosive. The heating of the explosive in the shock wave causes rapid chemical reactions liberating large quantities of energy. This energy sustains the process of propagation of the shock wave.

Accurate calculation of chemical reactions is necessary in problems concerning failure of detonation; we note, however, that the reactions themselves and their constants are generally unknown. When commercial charges of high-energy explosives detonate, we can limit ourselves to a simple gas-dynamic model of detonation [2]. In this model, the equation of state of the explosive in front of the shock wave has no influence on the parameters of the detonation wave (velocity, pressure, etc.). For definition, we will describe the explosive by its shock adiabatic curve:

$$p = \varphi((\rho/\rho_0)^n - 1) = f(\sigma),$$

Where the values of the coefficients c_1 and n may not agree with the actual values and change over broad limits. We will assume that the explosion of each element of volume of the explosive (cell) occurs instantaneously at a certain moment in time. The condition of explosion of a cell is an increase in the density in the cell. If the value of density ρ reaches a certain critical value (ρ_{cr}), the cell explodes.

In most problems, strong shock waves do not move through the explosion products (EP). In these problems, entropy can be considered practically constant and we can take the true isentrope as the equation of state of the EP:

$$p = c_1\rho^n = f(\rho),$$

defined experimentally and theoretically. Thus, we write the equation of state as

$$p = (1-\xi)f(\rho) + \xi f(\rho),$$

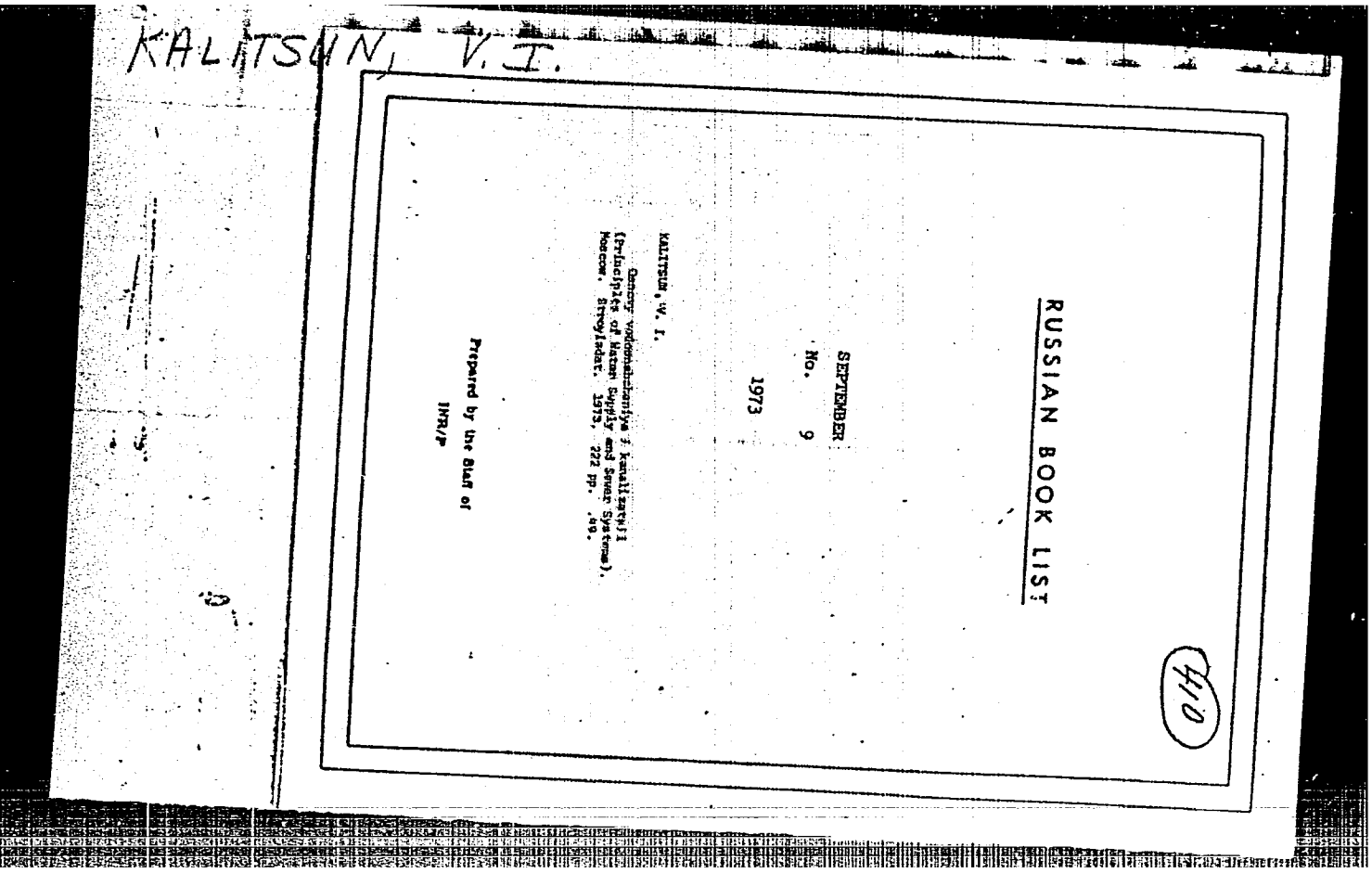
where the explosion corresponds to a transition from $\xi = 0$ to $\xi = 1$ (assuming that $\rho \geq \rho_{cr}$).

This model of detonation is convenient for use in gas-dynamic calculation plans, based on spreading of strong explosions by introducing mathematical viscosity. It is natural to select plans based on Lagrange coordinates, in order to avoid spreading of contact ruptures. The difference plan is constructed as was done in [3]. Similar difference plans for two-dimensional gas dynamics problems were also studied by other authors, for example Schultz, Wilkins, N. A. Dmitriyev, I. D. Safronov and Ye. V. Malinovskaya. In the two-dimensional case, a difficulty in principle arises which does not arise in the one-dimensional case. This difficulty is the strong distortion of the Lagrange grid during the course of calculation. This fact forced us to use different versions of grids in calculation. In the following, we will study only areas which have an axis of symmetry, when the explosion is initiated at one of the points on this axis. To initiate an explosion, at the initial moment we will assume increased density in several cells near the point of the explosion and, consequently, increased pressure in these cells.

1 2. Difference Grids

Let us describe three configurations of grids, which we will arbitrarily call spherical, rectangular and triangular.

a. Spherical grid. If an explosion is initiated at an internal point in the explosive, the detonation wave is at first an expanding sphere. It is natural to use this symmetry to construct the difference grid.



KALITSUN, V. I.

RUSSIAN BOOK LIST

SEPTEMBER

No. 9

1973

KALITSUN, V. I.

Osnovy vodoobezzarazheniya i kanalizatsii
(Principles of Water Supply and Sewer Systems).
Moscow, Stroyizdat, 1973, 222 pp. illus.

Prepared by the Staff of
INTA/P

1/2 009 UNCLASSIFIED PROCESSING DATE--UBDEC70

TITLE--DEHYDRATION AND DRYING OF WASTE WATER RESIDUES FROM PLANTS FOR THE PRIMARY TREATMENT OF WOOL -U-

AUTHOR-(03)-YAKOVLEV, S.V., KALITSUN, V.I., TERESHCHUK, A.I.

COUNTRY OF INFO--USSR

SOURCE--VODOSNABZH. SANIT. TEKH. 1970, (2), 13-16

DATE PUBLISHED-------70

SUBJECT AREAS--MATERIALS, MECH., IND., CIVIL AND MARINE ENGR

TOPIC TAGS--NATURAL FIBER, WASTE WATER CONVERSION, INDUSTRIAL WASTE TREATMENT

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--3008/1334 STEP NO--UR/0327/70/000/002/0013/0016

CIRC ACCESSION NO--AP0138344

UNCLASSIFIED

2/2 009 UNCLASSIFIED PROCESSING DATE--04DEC70

CIRC ACCESSION NO--AP0133344

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. 1ST AND 2ND SETTLINGS OBTAINED FROM WATER USED FOR SCOURING WOOL COMPRISE 8-12PERCENT BY VOL. OF THE TOTAL VOL. OF H SUB2 O USED AND 88-92PERCENT OF THE SLURRY IS H SUB2 O. SINCE A CONSIDERABLE AMT. OF WOOL FAT SETTLES WITH THE SLURRY, A PROCESS BASED ON COAGULATION AND FILTRATION AND FINALLY "SPRAY" DRYING WAS WORKED OUT TO PREP. THE MATERIAL FOR EXTN. THE AIR TEMP. FOR DRYING SHOULD BE LESS THAN OR EQUAL TO 400DEGREES AND THE EXHAUST GAS TEMP. SIMILAR TO 140DEGREES.

UNCLASSIFIED

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SEE KALIL . . .

USSR

UDC 541.65

KIMEL'FEL'D, Ya. M., SMIRNOVA, YE. M., PERSHIKOVA, N. I., KALIYA, O. L., TEMKIN, O. N., and FLID, R. M., Institute of Spectroscopy, Academy of Sciences USSR, and Moscow Institute of Fine Chemical Technology imeni M. V. Lomonosov, Moscow

"Vibrational Spectra and the Structure of Phosphine and Phosphite Complexes of Palladium Chloride and Bromide"

Moscow, Zhurnal Strukturnoy Khimii, Vol 13, No 4, Jul-Aug 72, pp 622-625

Abstract: On the basis of data obtained by IR and Raman spectroscopy of the phosphine complexes $Pd(PPh_3)_2X_2$ (X = Cl, Br) and the phosphite complexes $Pd/P(OPh)_3/_2X_2$ (X = Cl, Br), it was established that the phosphine complexes have a trans-structure and the phosphite complexes a cis-structure. The difference in structure explains why the phosphite complexes are effective catalysts in the synthesis of acrylic acid esters from acetylene at atmospheric pressure according to $C_2H_2 + CO + ROH \rightarrow CH_2=CH-COOR$, while the phosphine complexes are inactive in catalyzing this reaction. The authors thank G. N. Zhizhina, N. I. Af'anas'yeva, and A. V. Bobrova for assistance in determining the spectra of the complexes.

1/1

1/3 . 015 UNCLASSIFIED PROCESSING DATE--18SEP70

TITLE--MECHANISM OF THE ACTION OF MULTICOMPONENT METAL COMPLEX CATALYSTS IN SOLUTIONS -U-

AUTHOR-(04)-TEMKIN, O.N., KALIYA, O.L., SHESTAKOV, G.K., FLID, R.M.

COUNTRY OF INFO--USSR

SOURCE--DOKL. AKAD. NAUK SSSR 1970, 190(2), 398-401

DATE PUBLISHED--------70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--CHEMICAL REACTION MECHANISM, CATALYST ACTIVITY, ALKENE, ACETYLENE, METAL CATALYST, ORGANOMERCURY COMPOUND, EXCHANGE REACTION, PALLADIUM COMPOUND, ORGANOCOPPER COMPOUND, ACETIC ACID, CHLORINATION, COPPER CHLORIDE, CHLORINATED ORGANIC COMPOUND

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1984/1537 STEP NO--UR/0020/70/190/002/0398/0401

CIRC ACCESSION NO--AT0100162

UNCLASSIFIED

2/3 015 UNCLASSIFIED PROCESSING DATE--18SEP70

CIRC ACCESSION NO--AT0100162

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. LITERATURE DATE WERE CRIT. REVIEWED CONCERNING THE ACTION MECHANISMS OF MULTICOMPONENT METAL COMPLEX CATALYSTS IN REACTION INVOLVING OLEFINS, AROMATIC COMPOS., AND ACETYLENE. THE ADDITIVE, THE SUBSTRATE ACTIVATION, AND THE STEP BY STEP MECHANISM WERE DISCUSSED, TOGETHER WITH THE MECHANISM IN WHICH ONLY CONCN. AND ACTIVITY OF THE METAL CATALYST COMPLEX ARE AFFECTED BY ONE OF THE CATALYTIC SYSTEM COMPONENTS. MOREOVER, EXPTL. STUDIES SHOWED THAT PHOAC WAS OBTAINED WITH 78-84PERCENT YIELD WITHIN 6 HR BY THE CONVERSION PHHGOAC-(NA O AC) YIELDS PHOAC PLUS HG IN BOILING ACOH. THE FOLLOWING RESULTS WERE ESTABLISHED FOR THE EXCHANGE REACTIONS OF PHHGOAC WITH PDCL SUB2, PD(OAC) SUB2, AND CU(OAC) SUB2 IN GLACIAL ACOH: (1) REACTIONS OF ELECTROPHILIC SUBSTITUTION WERE MARKEDLY FASTER THAN THE OXIDN. REDN. HETEROLYSIS OF PD AND CU ORGANOMETALLIC COMPDS.; (2) BIPHENYL WAS FORMED FAST AND QUANT. AT LOW TEMPS. IN THE PRESENCE OF PDCL SUB2; (3) IN THE PD (OAC) SUB2-NAOAC SYSTEM, PHOAC AND BIPHENYL WERE FORMED WITH ABOUT 25PERCENT YIELD; (4) THE EXCHANGE OF PHHGOAC WITH CU(OAC) SUB2 OCCURRED AT 60-80DEGREES, BUT PHENYLCUPRIC ACETATE DEGRADATION OCCURRED AFTER LONG HEATING IN BOILING ACETIC ACID, AND THE PHOAC SO FORMED WAS RAPIDLY MERCURATED AND SEPD. AS PHENOLMERCURIC ACETATE CHLORIDE. EXPTS. SHOWED THAT EITHER TRANSCHLORO(BETA CHLOROVINYL)MERCURY OR BETA CHLOROVINYLCOPPER WERE FORMED IN BOTH HYDROCHLORINATION AND OXYCHLORINATION OF ACETYLENE AS INTERMEDIATE COMPDS., ACCORDING TO WHETHER HGCL SUB2-HCL OR CUCL HCL SOLNS. WERE USED FOR THE REACTION.

UNCLASSIFIED

3/3 015 UNCLASSIFIED PROCESSING DATE--18SEP70
CIRC ACCESSION NO--AT0100162
ABSTRACT/EXTRACT--THREE MECHANISMS WERE IDENTIFIED IN SUCH PROCESSES WHEN THEY WERE CARRIED OUT IN CUCL CUCL SUB2 AND HGCL SUB2-CUCL SUB2 SOLNS.

USSR UDC 621.357.13.035.2:661.879.1.22

PUZAKOV, V. V., BARABOSHKIN, A. N., and KALIYEV, K. A., and TARASOVA, K. P.

"Mechanism for the Growth Hemispherical Precipitates of Uranium Dioxide on the End of the Electrode"

Tr. In-ta elektrokhimii. Ural'sk. nauch. tsentr AN SSSR (Works of the Institute of Electrochemistry. Ural Scientific Center, Academy of Sciences, USSR), Vyp 18, 1972, pp 99-105 (from Referativnyy Zhurnal -- Khimiya, No 8(II), 1973, Abstract No 8L346 V. V. Grinina)

Translation: The hypothesis mentioned earlier that hemispherical shape of precipitates of UO_2 formed on the ends of Pt microcathode in $LiCl-KCl-UO_2-Cl_2$ melt at 400° was caused by a particular relationship of the specific electrical resistance of the cathode, the precipitate, and the melt. The specific and effective electrical resistances of the melt and the electrolytic UO_2 were compared as were the calculated and experimental forms of the precipitate on the end of the cathode. Measurements by electrical conductivity were carried out in an atmosphere of argon by the contact method, using a bridge to carry a current having a frequency of 5000 Hz from room temperature to 600°. The electrical conductivity of UO_2 was measured directly in the melt,

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PUZAKOV, V. V., et al., Tr. In-ta elektrokhimii. Ural'sk. nauch. tsentr AN SSSR, Vyp 18, 1972, pp 99-105

during the growth of the precipitate. A timed potentiometric method was used in the calculation of the electrical conductivity of the alloy to determine the diffusion coefficients of the uranyl ion in the pectic mixture LiCl-KCl. It was shown that the specific electrical conductivity of UO_2 was half an order of magnitude smaller than the effective electrical conductivity and two orders of magnitude smaller than the specific electrical conductivity of the melt. The theoretically calculated value of the form of the precipitate was close to that observed experimenally. The precipitate had a hemispherical form.

2/2

1/2 017 UNCLASSIFIED PROCESSING DATE--18SEP70

TITLE--PASSIVATION OF CATHODIC PRECIPITATES OF URANIUM DIOXIDE IN CHLORIDE MELTS -U-

AUTHOR-(03)-BARABOSHKIN, A.N., KALIYEV, K.A., TARASOVA, K.P.

COUNTRY OF INFO--USSR

SOURCE--ELEKTROKHIMIYA 1970, 6(1), 146-9

DATE PUBLISHED--------70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--MOLTEN CHLORIDE, ELECTRODE PROPERTY, CHLORIDE ELECTROLYSIS, METAL PASSIVATION, OXIDE FILM, URANIUM OXIDE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1987/0766 STEP NO--UR/0364/70/006/001/0146/0149

CIRC ACCESSION NO--AP0104212

UNCLASSIFIED

2/2 017 UNCLASSIFIED PROCESSING DATE--18SEP70

CIRC ACCESSION NO--AP0104212

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE PASSIVATION IS CAUSED BY EXCESS O IN THE UO SUB2 PPT. DURING ANODIC DISSOLN. OF THE DIOXIDE, IONS OF UO SUB2 PRIME POSITIVE POSITIVE GO INTO THE MELT AND THE SURFACE OF THE ANODE BECOMES ENRICHED IN O FORMING U OXIDES ALL THE WAY UP TO U SUB3 O SUB8. THE PASSIVATION PROCESS PROCEEDS WHETHER THE CURRENT IS APPLIED OR NOT, THE ULTIMATE RESULT BEING URANOUS URANIC OXIDE REMAINING ON THE SURFACE OF THE ANODE. IT IS JUSTIFIABLE TO CONCLUDE THAT PASSIVATION RESULTS FROM THE SHIELDING OF UO SUB2 BY U SUB3 O SUB2.

UNCLASSIFIED

USSR

UDC 632.95

AAVIK, KH. E., KALLASORG, R. A., REVEL'SKIY, I. A.

"Study of the Conditions Required for Microcoulometric Analysis of Phosphorus Containing Compounds"

Tr. 2-go Vses. soveshch. po issled. ostatkov pestitsidov profilakt. zagryaz-neniya imi produktov pitaniya, kormov i vnesh. sredy (Works of the Second All-Union Conference on the Investigation of Pesticide Residues and Preventive Contamination of Food Products, Fodder and Environment), Tallin, 1971, pp 23-27 (from RZh-Khimiya, No 12, Jun 72, Abstract No 12N423)

Translation: In analyzing organophosphorus compounds in a gas flow by means of a microcoulometric detector, a quartz tube (280 × 2 mm) at 950° and a titration cell with 35% AcOH are used. The degree of detection of the organophosphorus compounds is 70%, and the sensitivity is 5×10^{-9} grams.

1/1

USSR UDC 632.95

AAVIK, KH. E., KABUN, A. V., KALLASORG, R. A., REVEL'SKIY, I. A.

"Study and Development of the Method of Microcoulometric Detection of Halogen and Sulfur Containing Compounds"

Tr. 2-go Vses. soveshch. po issled. ostatkov pestitsidov profilakt. zagryaz-neniya imi produktov pitaniya, kormov i vnesh. sredy (Works of the Second All-Union Conference on the Investigation of Pesticide Residues and Preventive Contamination of Food Products, Feeds and Environment), Tallin, 1971, pp 16-22 (from RZh-Khimiya, No 12, Jun 72, Abstract No 12N421)

Translation: The conditions of 100% conversion of Cl and S-containing compounds in a gas flow into HCl and H_2S are found, and a titration cell is developed which permits detection (by chlorine) of $\sim 10^{-9}$ grams of substance. The selectivity coefficient with respect to hydrocarbons is $\sim 10^5$.

1/1

TITLE--ON SURGICAL POLICY IN TREATMENT OF BURN WOUNDS -U-

AUTHOR--KALLISTOV, B.M.

COUNTRY OF INFO--USSR

SOURCE--VESTNIK KHIRURGII IMENI I. I. GREKOVA, 1970, VOL 104, NR 3, PP 85-87
DATE PUBLISHED--------70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--PLASTIC SURGERY, WOUND, BURN, SKIN GRAFT, TISSUE TRANSPLANT

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1986/0625 STEP NO--UR/0589/70/104/003/0085/0087

CIRC ACCESSION NO--AP0102611

APPROVED FOR RELEASE: 07/20/2001 CIA-RDP86-00513R002201210006-7"

2/2 022 UNCLASSIFIED PROCESSING DATE--11SEP70

CIRC ACCESSION NO--AP0102611

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. A RELIABLE CURE OF PERSISTANTLY UNHEALING BURN ULCERS COULD BE GAINED ONLY BY MEANS OF RADICAL EXCISION OF ALL PATHOLOGICALLY CHANGED TISSUES AND SKIN PLASTY OF THE RESULTING OPERATIVE DEFECT. OF 118 ULCERS (IN 80 PATIENTS) IN 94PERCENT OF CASES THE IMMEDIATE RESTORATION OF SKIN COVER WAS ACCOMPLISHED WITH THE HELP OF FREE TRANSPLANTATION OF DERMATOME GRAFTS ON THE INTACT PROPER FASCIA. IN CASE OF EXCISION OF DEEP SEATED TISSUES ON THE FOOT PLASTIC REPLACEMENT OF DEFECTS WAS PERFORMED BY TRANSPLANTATION OF SKIN GRAFTS ON A FEEDING PEDICLE. SUCH POLICY PROVIDED STABLE HEALING IN 74 OF 85 ULCERS. THE RESULTS WERE FOLLOWED UP WITHIN THE TERMS FROM 2 TO 8 YEARS AFTER SURGERY.

UNCLASSIFIED

USSR UDC 535.3:551.51

KALLISTRATOVA, M.A., PCKASOV, V.V. [Institute Of Atmospheric Physics, AS,USSR]

"Correlation Measurement Of 'Wandering' Of Light Centers Of Gravity Of Spatially Limited Beams In A Turbulent Atmosphere"

Izv.VUZ:Radiofizika, Vol XV, No 5, May 72, pp 725-731

Abstract: The results are presented of measurements of the correlation functions of the "wandering" light centers of gravity of two light beams propagated at 250 and 650 meter long courses near the earth. The measurements were made for the cases where either the points of entrance or the points of observation are spaced. Apparatus and methods of measurement and the principles of measurement are discussed. Light beams from helium-neon lasers (λ = 0.63 micrometer) passing the turbulent layer were scanned at the receiving point with the aid of a rotating mirror by a narrow vertical slit behind which a photomultiplier was mounted. For an investigation of the correlation functions of "wandering," two beams from two lasers were used with mutually perpendicular polarization planes. The scheme of the transmission unit and a bloc diagram of the receiving apparatus are described. The results of the measurements are compared with theoretical calculations. The authors thank A.S. Gurvich for valuable consultations and discussions. 7 fig. 15 ref. Received by editors, 14 June 1971.

1/1

Acc. Nr.: AT0042698 K

Ref. Code: UR01
JPRS 5.

Dispersion of "Strong" Fluctuations of Laser Beam Intensity

(Abstract: "Measurements of the Dispersion of 'Strong' Fluctuations in the Intensity of Laser Radiation in the Atmosphere," by M. Ye. Gracheva, A. S. Gurvich and M. A. Kallistratova, Institute of Physics of the Atmosphere; Gor'kiy, Izvestiya Vysshikh Uchebnykh Zavedeniy, Radiofizika, Vol XIII, No 1, 1970, pp 56-60)

This paper gives the results of measurements of the mean square values of "strong" fluctuations of the logarithm of intensity of plane and spherical light waves propagating on horizontal paths 250 and 1,750 m long for high values of the structural constant of fluctuations of the atmospheric refractive index C_n ($C_n \leq 1.5 \cdot 10^{-7} cm^{-1/3}$). The light source was a gas laser ($\lambda = 0.63 \mu$), operating in a regime of axial oscillations with a high-quality collimator (D of aperture = 50 cm). A point detector was used. A study was made of the dependence $\sigma_I = f(2\sigma_0)$, where σ_0 is the mean square value of fluctuations of the logarithm of wave amplitude, computed by the smooth perturbations method. For plane and spherical waves, as well as for white light, there is a σ_I maximum when $\sigma_0 \sim 1$. With a further increase in σ_0 there is a slow decrease in σ_I. The maximum σ_I value for a spherical wave is greater than for a plane wave.

Reel/Frame 19760805

21

Acc. Nr.: AT0042697 Ref. Code: UR0141

JPRS 52162

Amplitude of Light Wave During Propagation in Turbulent Atmosphere

(Abstract: "Measurements of the Mean Level of the Amplitude of a Light Wave During Propagation in a Turbulent Atmosphere," by M. Ye. Gracheva, A. S. Gurvich and M. A. Kallistratova, Institute of Physics of the Atmosphere; Gor'kiy, Izvestiya Vysshikh Uchebnykh Zavedeniy, Radiofizika, Vol XIII, No 1, 1970, pp 50-55)

The authors describe the method and present the results of measurements of the mean logarithm of the amplitude $\langle\chi\rangle$ of a plane light wave propagating on horizontal paths 250 and 1,750 m in length in the surface layer of the atmosphere. The light beam from a helium-neon gas laser ($\lambda = 0.63\mu$) was broadened by a high-quality collimator to a diameter of 50 cm. It was demonstrated that with the method used the effect of atmospheric absorption on the measured $\langle\chi\rangle$ value is eliminated. The authors determined the dependence of $\langle\chi\rangle$ on the parameter σ_0, representing the dispersion of the fluctuations of the logarithm of wave amplitude, computed by the smooth perturbations method, as well as the dependence of $\langle\chi\rangle$ on the simultaneously measured dispersion of fluctuations of the logarithm of amplitude

Reel/Frame 19760803

12

AT0042697

$$\sigma^2_\chi = \langle (\chi - \langle \chi \rangle)^2 \rangle.$$

These data show that the expression $\langle \chi \rangle = -\sigma^2_\chi$, found theoretically for the region of "weak" fluctuations, that is, for $\sigma_0 < 1$, remains correct for "strong" fluctuations as well. There is a contradiction between the presented data and the hypothesis of a Rayleigh distribution of amplitude fluctuations in the region $\sigma_0 \gg 1$.

19760804

USSR UDC: 621.318.58

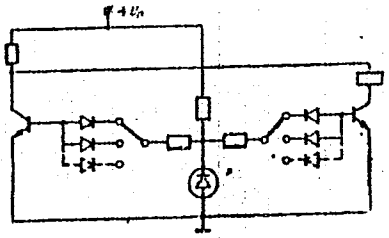
SKRITSKIY, L. G., BUDYANOV, V. P., KALMAKOV, A. A., KRIVONOSOV, A. I., MILANOVICH, V. A., SHEVELEV, V. Ya., Moscow Construction Engineering Institute imeni V. V. Kuybyshev

"A Photo Relay"

Moscow, Otkrytiya, izobreteniya, promyshlennyye obraztsy, tovarnyye znaki, No 16, Jun 71, Author's Certificate No 303672, Division H, filed 18 Jun 69, published 13 May 71, pp 189-190

Translation: This Author's Certificate introduces a photo relay which contains interconnected photoreceiver, two groups of stabilitrons with different stabilization voltages and two transistors. Connected in the collector circuit of the first of the transistors is the winding of an electromagnetic actuating relay. As a distinguishing feature of the patent, tuning is facilitated and the accuracy with which the electromagnetic relay operates as a function of the light flux is increased by connecting the cathodes of all stabilitrons through switches to the centertap of a photoresistive voltage divider, connecting the anodes of stabilitrons with lower stabilization voltage to the base of the first transistor, and connecting the anodes of stabilitrons with higher stabilization voltage to the base of the second transistor. The collector-emitter junction of this transistor shunts the winding of the electromagnetic relay.
1/2

SKRITSKIY, L. G., USSR Author's Certificate No 303672



2/2

1/2 020 UNCLASSIFIED PROCESSING DATE--13NOV70

TITLE--RAPID METHOD OF DETERMINING TIN IN ORES AND DRESSING PRODUCTS BASED ON THE MOSSBAUER EFFECT -U-

AUTHOR-(02)-SALAKHUTDINOV, N., KALMAKOV, A.A.

COUNTRY OF INFO--USSR

SOURCE--IZVEST. V.U.Z., TSVETNAYA MET., 1970, (1), 17-21

DATE PUBLISHED--------70

SUBJECT AREAS--MATERIALS, EARTH SCIENCES AND OCEANOGRAPHY

TOPIC TAGS--TIN, METAL ORE, ORE BENEFICIATION, BIBLIOGRAPHY, METAL CHEMICAL ANALYSIS, MOSSBAUER EFFECT

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--2000/0549 STEP NO--UR/0149/70/000/001/0017/0021

CIRC ACCESSION NO--AP0124244

UNCLASSIFIED

2/2 020 UNCLASSIFIED PROCESSING DATE--13NOV70

CIRC ACCESSION NO--AP0124244

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. A FAST METHOD OF DETERMINING SN IN ORES AND ORE DRESSING PRODUCTS, BASED ON THE MOSSBAUER EFFECT, IS DESCRIBED TOGETHER WITH THE RESULTS OF INDUSTRIAL TESTS ON A MODEL APPARATUS. BY THIS MEANS SN CONTENTS FO 0.1-60PERCENT MAY READILY BE DETERMINED TO AN ACCURACY AT LEAST EQUAL TO THAT OF CHEMICAL ANALYSIS. THE TIME REQUIRED FOR A SINGLE MEASUREMENT IS 4 MIN AND THE WHOLE ANALYSIS TAKES SIMILAR TO 15 MIN. THERE IS NO DANGER TO THE OPERATOR FROM THE RADIATION INVOLVED.

UNCLASSIFIED

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UDC 632.95

VTOROV, B. G., KALMANOVSKIY, V. I., CHULPANOVA, L. V., SHESHENIN, V. A., and YASHIN, YA. I.

"Some Particulars in the Analysis of Pesticides by a Recombination Rate Constant Detector"

Tr. 2-go Vses. soveshch. po issled ostatkov pestitsidov i profilakt. zagryazneniya imi produktov pitaniya, kormov i vnesh. sredy (Works of the Second All-Union Conference on Investigation of Residues of Pesticides, and Prevention of Pesticide Contamination of Foodstuffs, and Fodder and the External Environment), Tallinn, 1971, pp 47-50 (from RZh-Khimiya, No 11, Jun 72, Abstract No 11N404)

Translation: A recombination rate constant detector is used to analyze the residues of chlorine-containing pesticides in various materials in place of electron capture detectors. The recombination rate constant detector has a linear dynamic range of $\sim$500 (with respect to lindane), and higher sensitivity and stability than the electron capture detector.

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USSR UDC 547.962

CHUMAKOV, V. M., IVANOV, V. P., YAGUZHINSKIY, L. S., ROZANTSEV, E. G., and KALMANSON, A. E., Institute of Virology imeni D. I. Ivanovskiy, Academy of Medical Sciences USSR; Institute of Chemical Physics, Academy of Sciences USSR; and Interfaculty Laboratory of Bioorganic Chemistry, Moscow State University imeni M. V. Lomonosov, Moscow

"An Investigation of Various Iminoxyl Free Radicals in Biological and Artificial Membranes by the Method of Erythrocyte Sedimentation Rate"

Moscow, Molekulyarnaya Biologiya, Vol 6, No 2, Mar/Apr 72, pp 240-245

Abstract: The structure and function of lecithin micelles and mitochondrial membranes were investigated by studying their interaction with iminoxyl spin labels or free radicals I-V. The ESR [erythrocyte sedimentation rate] spectra obtained from various types of solutions containing the radicals and the substances being studied were examined. It was discovered that the ESR spectrum of the interaction of radical I with lecithin micelles and mitochondria had both a broad and a narrow signal, indicating that the radical was localized in two different parts of the membranes (the hydrophilic and hydrophobic parts). The same type of spectrum was observed for radical IV, but radicals III and V were localized only in the hydrophilic region of 1/2

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CHUMAKOV, V. M., et al., Molekulyarnaya Biologiya, Vol 6, No 2, Mar/Apr 72, pp 240-245

the membranes. All five iminoxyls interacted with the respiratory chain of the mitochondria, resulting in iminoxyl decay, the rate of which was significantly lower in the hydrophobic region. Radical I was used to show that when the mitochondria are energized, the spin labels are transferred from the hydrophobic region to the hydrophilic. Radical I was also used to show that the changes which occur in the lipid part of the mitochondria during energization are qualitatively different from those which occur during reduction of the respiratory chain.

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USSR UDC 577.3

CHUMAKOV, V. M., GRIGORYAN, G. L., SUSKINA, V. I., ROSANTSEV, E. G., and KALMANSON, A. E., Institute of Virology imeni D. I. Ivanovskiy, Academy of Medical Sciences USSR, and Institute of Chemical Physics, Academy of Sciences USSR, Moscow

"Study of Spin Labels in Animal Tissues"

Moscow, Biofizika, Vol 16, No 3, May/Jun 71, pp 564-565

Abstract: The stable free iminoxyl radicals 2,2,6,6-tetramethyl-4-aminopiperidine--1-oxyl and its maleic acid imide derivative were injected intraperitoneally to rats, mice, and frogs in aqueous solutions in a dose of 500-600 mg/kg. Within 2-4 hrs after injection of the solutions, the lyophilized tissues of the animals exhibited EPR spectra indicating the presence of firmly fixed (immobilized) free radicals. Wetting of the tissues with physiological saline solution transformed the EPR signal of firmly fixed free radicals into one typical for radicals with a higher mobility. On treatment of the lyophilized tissues with water vapor and O_2, the concentration of iminoxyl radicals, as indicated by the EPR spectrum, first increased to a maximum and then gradually decreased. The moisture content of the tissue samples in these experiments was brought to only 10% (i.e., only bound water was present), so that the radicals remained in the firmly fixed state. It was shown in earlier work by Chumakov and Kalmanson that

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under these conditions the EPR tissue semiquinone signal associated with the semiquinone of coenzyme Q also increases and, on passing through a maximum, finally disappears. In the present work, disappearance of this signal, which contributed to the central component of the iminoxyl radical EPR spectrum, resulted from changes in the tissues spectrum (e.g., rat liver tissue) upon treatment with water vapor and O_2. A reaction between the iminoxyl and semiquinone radicals in the tissues could be assumed. The fact that the iminoxyl radicals react with semiquinones in a reversible reaction with the formation of hydroxylamines was established in experiments conducted in vitro in which semiquinones derived from benzoquinone, duroquinone, and naphthoquinone were applied. The results obtained indicated that iminoxyl spin lables are convenient redox inidicators for the study of processes of electron transfer in the respiration chain of biological oxidation in mitochondria.

Acc. Nr: AP0037763 Abstracting Service: CHEMICAL ABST. 4/70 Ref. Code: NE0000

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79440m Electron paramagnetic resonance study of free radical products of the reaction of ninhydrin with amino acids, peptides, and proteins. Yuferov, V. P.; Froncisz, Wojciech; Kharitonenkov, I. G.; Kalmanson, A. E. (Dep. Biophys., D. I. Ivanovskii Inst. Virol., Moscow, USSR). *Biochim. Biophys. Acta* 1970, 200(1), 160–7 (Eng). EPR was used to study free radical products formed in the reaction of ninhydrin with amino acids and peptides. The EPR spectra of free radicals were characteristic of various amino acids and *N*-terminal amino acids of peptides. The anals. of these spectra showed that their hyperfine structure was produced by interaction of the unpaired electron with one N nucleus and protons which were a part of structure of the free radical products. The yield of free radicals depended on pH of the medium and on the amt. of H_2O and O in the reaction mixt. Specificity of spectra permits use of EPR to identify amino acids and *N*-terminal amino acids in peptides.

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USSR UDC: 621.396.6:621.315.612

KAL'MENS, N. V., NEYMAN, M. I., IMANOVA, A. A.

"A Water-Emulsion Plasticizer for Extrusion of Clay-Free Ceramic Materials"

USSR Author's Certificate No 268526, filed 5 Aug 68, published 8 Jul 70 (from RZh-Radiotekhnika, No 1, Jan 71, Abstract No 1V376 P)

Translation: A water-emulsion plasticizer is proposed for extrusion of clay-free ceramic materials based on organic binders and oily components. To increase the strength of tubular stock, the plasticizer contains a mixture of oxidized linseed and tranformer oils taken in the following ratios (in parts by weight): oxidized linseed oil 50-70, transformer oil 30-50.

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CSO: 1860-W

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UDC: 621.372.81.09

KALMYK, V. A., MARKOVA, S. A., RAYEVSKIY, S. B.

"Results of Numerical Solution of a Complex Dispersion Equation for the HE_{11} Wave in a Two-Layered Circular Waveguide"

Moscow, Radiotekhnika i Elektronika, Vol 17, No 9, Sep 72, pp 1948-1951

Abstract: Research has established the possibility that complex waves may exist in some kinds of waveguide structures, meaning waves which have complex propagation constants in spite of the absence of energy dissipation. In particular it has been found that such waves exist in a two-layered circular waveguide. Analysis of the dispersion properties of complex waves requires simultaneous solution of two complicated transcendental equations derived from the initial complex dispersion equation with a large number of parameters and additional logical conditions. In this paper the authors give the results of a numerical computer solution of the dispersion equation for the HE_{11} wave in a two-layered circular shielded waveguide for the case of complex waves.

USSR

UDC 621.375.82

KALMYKOV, A. A., and ROZENTAL', G. N.

"Ionizing Properties of Glows on Dielectric and Metallic Surfaces Irradiated by Ruby Laser Light"

V sb. Kvant. elektronika (Quantum Electronics -- Collection of Works), No 2(14), Moscow, "Sov. Radio," 1973, pp 12-18 (English summary) (from RZh-Fizika, No 10, Oct 73, Abstract No 10D898 from authors' abstract)

Translation: A study was made of the properties of glows on metallic and dielectric surfaces which interact with giant-pulse laser radiation, from the standpoint of their ionizing properties. Using the quantity of the current in the ionization chamber, it was possible to judge the spectral composition of the glows and the propagation of the radiation in the chamber volume. The amount of energy emitted by a glow in a given spectral interval was determined. Bibliography with seven titles.

Magnetohydrodynamics

USSR UDC 538.082:533.082

KALMYKOV, A. A., TIMOFEIEV, A. D., SHEVCHUK, B. A.

"Using Charged Particle Beams to Measure Magnetic Field Strength in a Plasma"

Leningrad, Zhurnal Tekhnicheskoy Fiziki, Vol 41, No 11, Nov 71, pp 2442-2453

Abstract: The authors analyze the possibilities of measuring the strength of magnetic and electric fields by using a beam of charged particles in coaxial plasma systems in the presence of E_r, E_z, and H_ϕ field components. A detailed analysis is made of the conditions under which such measurements are possible and of the factors which influence measurement accuracy. The problem is solved both analytically and by numerical methods for various forms of distribution of the fields. The distribution of magnetic fields is experimentally measured in a coaxial plasma pulse accelerator by using beams of protons and deuterons with an energy of 10-40 keV. The experimental results are compared with data of measurements using magnetic probes. The authors thank A. I. Morozov for interest in the work. Eight figures, bibliography of fourteen titles.
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